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Gilford

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(54) **STRAWBERRY PLANT NAMED 'DRISCOLL BONAIRE'**

(50) Latin Name: ***Fragaria×ananassa***
Varietal Denomination: **Driscoll Bonaire**

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(58) **Field of Classification Search** Plt./209, Plt./208

See application file for complete search history.

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(57) **ABSTRACT**

This invention relates to a new and distinct variety of strawberry named 'Driscoll Bonaire'. The variety is similar to the varieties 'Driscoll Malibu' and 'Driscoll Osceola.' The variety is distinguished from 'Driscoll Malibu' and 'Driscoll Osceola,' in particular, by its longer petiole length and wider petiole diameter, longer sepal length and greater sepal width, longer fruit length, greater berry weight and longer harvest interval.

4 Drawing Sheets

Latin name of the genus and species of the plant claimed: The variety is botanically identified as *Fragaria×ananassa.*

Variety denomination: The strawberry variety denomination is 'Driscoll Bonaire'.

BACKGROUND OF THE INVENTION

The new variety originated as a result of a controlled cross between female cultivar 'Driscoll Marathon' (U.S. Plant Pat. No. 12,817) and male cultivar 'Driscoll Madeira' (U.S. Plant Pat. No. 14,109) in an ongoing breeding program, and was discovered as a seedling in Hillsborough County, Fla. in December 2000. The original seedling of the new cultivar was asexually propagated by stolons in a nursery in Shasta County, Calif. Propagules were transplanted to a controlled breeding plot in Hillsborough County, Fla., where the variety was identified and selected for further evaluation. 'Driscoll Bonaire' was subsequently asexually propagated and underwent further testing in Hillsborough County, Fla. for 5 years. This propagation and testing has demonstrated that the combination of traits disclosed herein which characterize the new variety are fixed and retained true to type through successive generations of asexual reproduction.

SUMMARY OF THE INVENTION

The present invention relates to a new and distinct variety of strawberry named 'Driscoll Bonaire.' The variety is botanically identified as *Fragaria×ananassa.* The new variety is distinguished from other varieties by a number of characteristics as set forth in Tables 1–4.

COMPARISON TO SIMILAR VARIETIES

The varieties which we believe to be similar to 'Driscoll Bonaire' from those known to us are 'Driscoll Malibu' (U.S. Plant Pat. No. 16,070) and 'Driscoll Osceola' (U.S. Plant Pat. No 15,752). There are several characteristics of the new variety that are different from, or not possessed by 'Driscoll

Malibu' and 'Driscoll Osceola'. For example, the new variety has a longer petiole length and wider petiole diameter, longer sepal length and greater sepal width, longer fruit length, greater berry weight and longer harvest interval. Additional characteristics of Driscoll Bonaire include an orbicular petal shape, a rounded petal apex and an obtuse petal base. The typical and observed petal number of 'Driscoll Bonaire' is five and the petal margin is entire. The typical and observed sepal number of 'Driscoll Bonaire' is ten. 'Driscoll Bonaire' also has a laceolate sepal shape, an acute sepal apex and a serrate sepal margin. 'Driscoll Bonaire' also has a typical and observed broadly orbicular leaflet shape and a round leaflet apex. The typical and observed diameter of the fruiting truss of 'Driscoll Bonaire' is 2.9 and is pale green in color (RHS, 142A). The average number of strawberries on the fruiting truss of 'Driscoll Bonaire' is one. Additionally, the typical and observed length and width of the hollow center of 'Driscoll Bonaire' is 21.7 mm and 7.9 mm respectively. 'Driscoll Bonaire' has a medium sweetness with an average brix of 9.2 and medium acidity with an average brix to acid ratio of 12.18:1.

'Driscoll Bonaire' is distinguished from its reference varieties, 'Driscoll Malibu' and 'Driscoll Osceola' as indicated in Tables 1–4.

The parents, 'Driscoll Marathon' (U.S. Plant Pat. No. 12,817) and 'Driscoll Madeira' (U.S. Plant Pat. No. 14,109), were not available for side by side comparison with 'Driscoll Bonaire'. 'Driscoll Bonaire' differs from 'Driscoll Marathon' by being a less vigorous plant, having much greater flesh firmness and greatly improved skin strength. 'Driscoll Bonaire' differs from 'Driscoll Madeira' by having a much glossier skin and a brighter red color where 'Driscoll Madeira' was a darker red color.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographs show typical specimens of the new variety, including fruit, foliage and flowers, in color as nearly true as it is reasonably possible to make in color illustrations of these characteristics.

FIG. **1** shows the upper side of the leaves of the plant.

FIG. **2** shows the under side and upper side of the flowers.

FIG. **3** shows a close-up of the fruit.

FIG. **4** shows the fruit in longitudinal cross-section.

DESCRIPTION OF THE NEW VARIETY

The following detailed description of the new variety is based upon observations taken of plants harvested from a nursery in McArthur, Calif. in September and October, 2004 and held in cold storage until planting in Hillsborough County, Fla. in October, 2004. Plants were grown in raised beds of soil under conditions typical of commercial strawberry production in Hillsborough County, Fla. Fruits were harvested twice weekly from November, 2004 to April, 2005 for yield determination. Observations of 'Driscoll Bonaire', 'Driscoll Malibu', and 'Driscoll Osceola' were made in side by side comparison in January, 2005. Color designations, color descriptions, and other phenotypical descriptions may deviate from the stated values and descriptions depending upon variation in environmental, seasonal, climatic and cultural conditions. Colors are described and the most similar color designations are provided from The Royal Horticultural Society (R.H.S.) Colour Chart.

PROPAGATION

The new variety is principally propagated by way of stolons. Although propagation by stolons is presently preferred, other known methods of propagating strawberry plants may be employed.

CHARACTERISTICS OF THE NEW VARIETY

Information on the new variety is presented in Tables 1, 2, 3 and 4. In the tables, the flowers described are secondary flowers except where indicated. The fruit described is the secondary fruit on four month old plants. Fruit and flower measurements are an average of both primary and secondary fruit and flowers.

Table 1 provides information on the plant and fruit characteristics of the new variety 'Driscoll Bonaire' compared with characteristics of 'Driscoll Malibu' and 'Driscoll Osceola'. Table 2 provides additional information of the plant and fruit characteristics of the new variety 'Driscoll Bonaire' compared with characteristics of the varieties 'Driscoll Malibu' and 'Driscoll Osceola'. Table 3 provides reactions of the new variety to stresses, pests and diseases compared with reactions of the varieties 'Driscoll Malibu' and 'Driscoll Osceola'. Table 4 provides isozyme characteristics of the new variety as compared to that of the varieties 'Driscoll Malibu' and 'Driscoll Osceola'.

TABLE 1

QUANTITATIVE COMPARISON OF 'DRISCOLL BONAIRE', 'DRISCOLL MALIBU' AND 'DRISCOLL OSCEOLA'

	'Driscoll Bonaire'	'Driscoll Malibu'	'Driscoll Osceola'
Plant Characteristics			
Height of Plant (cm)	9.2	11.4	8.3
Spread of Plant (cm)	32.4	33.9	31.2
Number of Crowns	3.7	4.9	3.8
Leaf Characteristics			
Terminal Leaflet Length (cm)	7.8	6.6	6.7
Terminal Leaflet Width (cm)	7.9	6.6	8.1
Terminal Leaflet Length/Width Ratio	0.98	0.99	0.83
# Teeth/Terminal Leaflet	25.7	22.5	23.8
Color of upper side	132B medium green	141A light to medium green	135B medium green
Color of under side	130B light green	139C light green	138B light green
Petiole Length (cm)	7.7	10.3	8.0
Petiole Diameter (mm)	4.2	3.2	3.5
Petiole Color	142C green	141C green	140C green
Petiolule Length (mm)	11.2	9.8	8.3
Petiolule Diameter (mm)	2.5	1.9	2.0
Petiolule Color	142C green	141C green	140C green
Bract Frequency	92% typically paired	83% typically paired	8% typically single
Stipule Length (cm)	3.07	3.46	3.53
Stipule Width (cm)	0.99	0.81	0.89
Stolon Characteristics			
Anthocyanin color	185A greyed purple red	58A purple red	59D purple red
Diameter at bract (mm)	3.09		
Avg. # of Daughter plants (2003 Nursey)	54	55	65
Flower Characteristics			
Petal Length (cm)	1.40	1.22	1.38
Petal Width (cm)	1.52	1.29	1.48
Petal Length/Width Ratio	0.92	0.95	0.93
Flower Diameter (cm)	2.94	2.57	2.83
Calyx Diameter (cm)	4.42	3.99	4.41
Sepal Length (mm)	18.3	15.6	16.9
Sepal Width (cm)	8.5	7.1	6.8
Color of Upper Side of Petal	155C white	155C white	155C white
Receptical Color	1B yellow	1B yellow	1B yellow
Anther Color	1A yellow	1A yellow	1A yellow
Fruiting Truss Length (cm)	13.5	14.4	11.8
Fruit Characteristics			
Fruit Length (cm)	5.2	4.7	4.2
Fruit Width (cm)	4.1	3.7	3.8
Fruit Length/Width Ratio	1.25	1.25	1.13
Average Berry Weight (g)	32.9	28.0	29.9
External Color	46A red	46B red	46A red

TABLE 1-continued

QUANTITATIVE COMPARISON OF 'DRISCOLL BONAIRE', 'DRISCOLL MALIBU' AND 'DRISCOLL OSCEOLA'

	'Driscoll Bonaire'	'Driscoll Malibu'	'Driscoll Osceola'
Internal Color	43A light red	48C orange red	48D orange red
Achene Coloration	178B to 160B Greyed Orange to Greyed Yellow	178C to 160C Greyed Orange to Greyed Yellow	178C to 161B Greyed Orange to Greyed Yellow
Achenes per berry	342	240	225
Achene weight (g)	0.00058	0.00062	0.00089
2004-2005 Marketable Yield (g/plant)	435	333	348

TABLE 2

QUALITATIVE COMPARISON OF 'DRISCOLL BONAIRE', 'DRISCOLL MALIBU' AND 'DRISCOLL OSCEOLA'

	'Driscoll Bonaire'	'Driscoll Malibu'	'Driscoll Osceola'
Plant			
Habit	flat globose	globose	flat globose
Canopy Density	medium	medium	open to medium
Vigor	medium	weak to medium	medium
Leaf			
Shape in cross section	concave	slightly concave to flat	concave to slightly concave
Interveinal blistering	weak	medium	medium
Glossiness	medium	weak	medium
Number of leaflets	three only	three only	three only
Terminal leaflet margin profile	revolute	flat	flat
Terminal leaflet shape of base	rounded	rounded	rounded
Terminal leaflet shape of teeth	obtuse	obtuse to rounded	obtuse
Stipule pubescence	medium	medium	medium
Petiole pubescence	dense	dense	dense
Petiole pose of hairs	outwards	downwards	outwards to downwards
Stolon			
Anthocyanin coloration	strong	medium to strong	medium to strong
Thickness	medium	medium to thick	medium to thick
Pubescence	medium	medium	dense
Inflorescence			
Position relative to foliage	level with	level to above	level with to above
Diameter of calyx relative to corolla on secondary flowers	larger	larger	larger
Diameter of inner calyx relative to outer on secondary flowers	same size	larger	smaller to same size
Spacing of petals	overlapping	overlapping	overlapping
Fruiting Truss			
Attitude at first picking	prostrate	prostrate	prostrate

TABLE 2-continued

QUALITATIVE COMPARISON OF 'DRISCOLL BONAIRE', 'DRISCOLL MALIBU' AND 'DRISCOLL OSCEOLA'

	'Driscoll Bonaire'	'Driscoll Malibu'	'Driscoll Osceola'
Fruit			
Predominant shape	conical	conical	conical
Difference in shapes between primary and secondary fruits	slight	slight	slight
Band without achenes	very narrow	very narrow	very narrow
Unevenness of surface	weak	medium	weak
Evenness of color	slightly uneven	slightly uneven	slightly uneven
Glossiness	strong	strong	strong
Insertion of achenes	level with surface	below to level with the surface	below surface
Insertion of calyx	level	level	level
Pose of the calyx segments	reflexed	reflexed	spreading to reflexed
Size of calyx in relation to fruit on secondary fruit	same size to larger	same size to larger	same size to larger
Adherence of calyx	strong	strong	strong
Firmness of flesh	soft	soft to medium	soft to medium
Evenness of flesh color	slightly uneven	slightly uneven	slightly uneven
Distribution of flesh color	marginal and central	marginal and central	marginal and central
Hollow center size	small	small	medium
Sweetness	medium	medium	medium
Texture when tasted	fine	medium	fine
Acidity	medium	medium	medium
Time of First Flowering in 2003	late October	early November	early November
Harvest Interval in 2003	late November through early April	early December through early April	early December through early April
Type of Bearing	partially everbearing	partially everbearing	partially everbearing

REACTION TO STRESS, PESTS, AND DISEASE

TABLE 3

REACTIONS TO STRESS PESTS AND DISEASES FOR 'DRISCOLL BONAIRE', 'DRISCOLL MALIBU' AND 'DRISCOLL OSCEOLA'

	'Driscoll Bonaire'	'Driscoll El Capitan'	'Driscoll Venice'
Reaction to Pests			
Tetranychus urticae	susceptible	susceptible	susceptible
Lygus hesperus	susceptible	susceptible	susceptible
Reaction To Diseases			
Botrytis fruit rot	susceptible	susceptible	susceptible
Powdery mildew	moderately susceptible	moderately susceptible	moderately susceptible
Verticillium wilt	susceptible	highly susceptible	highly susceptible
Strawberry Mottle Virus	susceptible	susceptible	susceptible
Xanthomonas fragariae	moderately susceptible	moderately susceptible	moderately susceptible

ISOZYME ANALYSIS

In addition to the morphological description above, the new cultivar 'Driscoll Bonaire' has been analyzed to obtain an indication of its genetic makeup to provide further means for identifying the new variety and distinguishing it from other somewhat similar and/or related strawberry varieties. Specifically, leaf samples of 'Driscoll Bonaire', 'Driscoll Malibu' and 'Driscoll Osceola' were analyzed by electrophoresis for isozyme patterns of the enzymes phosphoglucoisomerase ("PGI"), leucine aminopeptidase ("LAP") and phosphoglucomutase ("PGM"). See J. Amer. Soc. Hort. Sci. 106:684–687. Isozyme characterization of the three varieties is presented in Table 4, with the letters representing the banding patterns for each enzyme as designated in the above-identified article.

TABLE 4

ISOZYME ANALYSIS FOR 'DRISCOLL BONAIRE', 'DRISCOLL MALIBU' AND 'DRISCOLL OSCEOLA'

Locus	'Driscoll Bonaire'	'Driscoll Malibu'	'Driscoll Osceola'
PGI	A1	A1	A1
LAP	B3	B3	B3
PGM	C2	C4	C4

What is claimed:

1. A new and distinct variety of strawberry plant, substantially as shown and described.

* * * * *

FIG. 1

FIG. 2

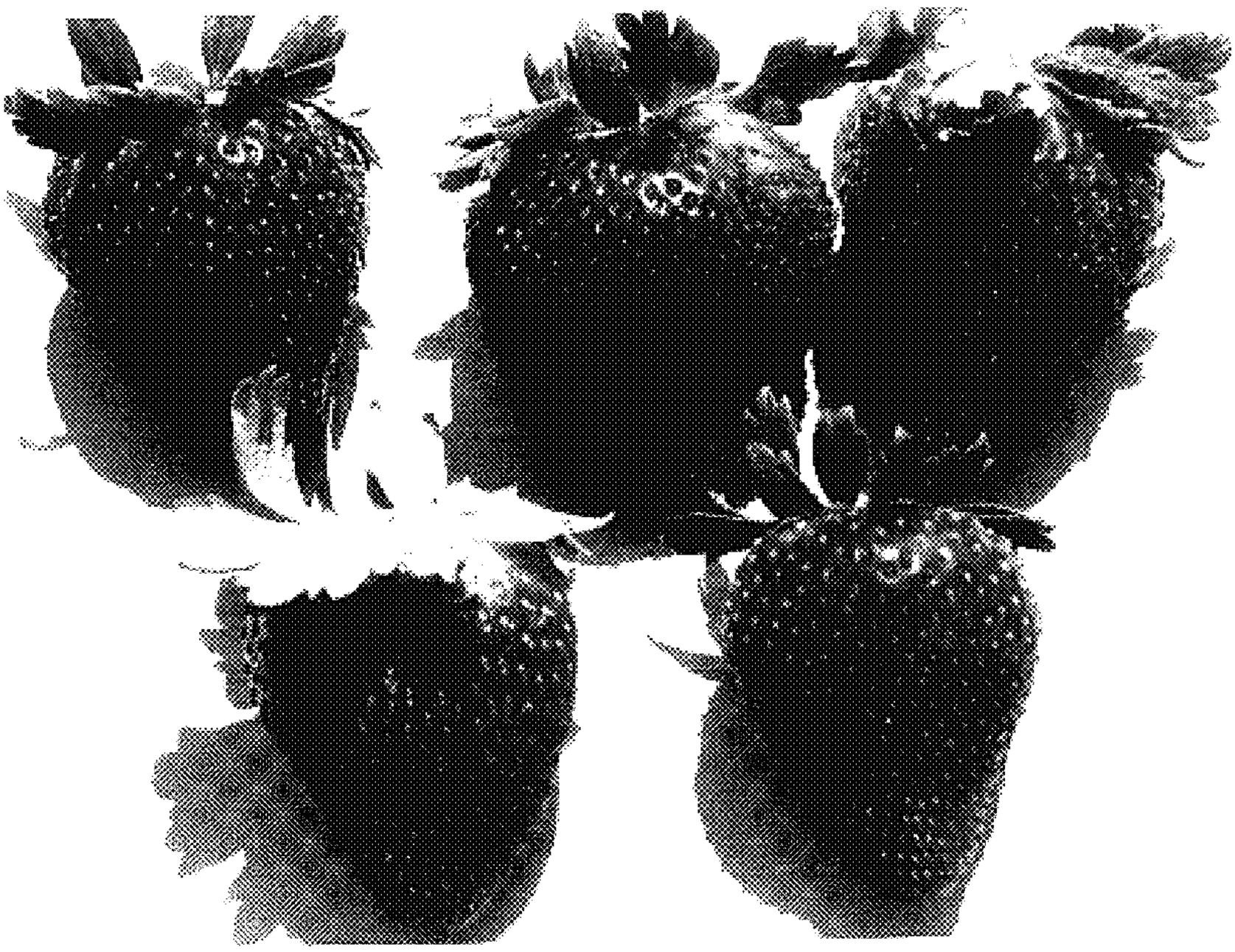

FIG. 3

FIG. 4